



UNIVERSITI PUTRA MALAYSIA

**RELATIONSHIPS BETWEEN INTELLECTUAL STYLES AND ACADEMIC
ACHIEVEMENT OF MALAYSIAN SECONDARY SCHOOL STUDENTS**

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**By
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January 2012

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Faculty: **Educational Studies**

The present study aims to investigate the impact of Thinking and Learning styles on Academic achievement of secondary school students in Malaysia. This study attempts to identify the Thinking styles and Learning abilities that contribute to the variations in Academic achievement. The Kolb Learning Style Inventory (1999) and the Thinking Styles Inventory (TSI, Sternberg, Wagner, and Zhang, 2007) were administered in nine government schools in Kuala Lumpur. Mean scores of the students in five main subjects, namely English, science, mathematics, history and geography, were collected and the mean was calculated as academic achievement of the students.

A total of 421 Grade 10 (form four) students was randomly selected as sample of this study. Results of the analyses of variance show no statistically significant difference in academic achievement of Malaysian secondary school students for the five dimensions (Function, Forms, Levels, Scopes and Leanings) of thinking styles.

The results of regression analysis indicated that Active Experimentation, Reflective Observation, Conservative and Oligarchic styles contribute significantly to the variations in the academic achievement; $F(17, 394) = 2.798, p < .05$. The findings add understanding on the intellectual styles of Malaysian secondary school students.

Analysing the contribution of intellectual styles towards subject-by-subject academic achievement indicated that six variables among the intellectual styles significantly predicted academic achievement results in five main subjects. These intellectual styles were Judicial, Anarchic, Oligarchic, Conservative, Active Experimentation, and Reflective Observation. Of these styles, Active Experimentation always positively predicts academic achievement in different subjects, while the Conservative style always negatively predicts academic achievement. The Judicial style significantly predicted students' academic achievements in mathematics and geography. Reflective Observation was among the predictors in English, history and geography. Finally, the Oligarchic and Anarchic styles significantly contributed to students' achievement in geography. The unique contributions of the intellectual styles to academic achievement in these five main subjects ranged from 7% to 10%. This finding not only indicates that intellectual styles play an important role in students' academic achievements in these subjects; it can also be interpreted that, in Malaysia, the use of these styles in dealing with these subjects tended to be rewarded academically.

The findings of this study helped to extend knowledge in the profiling of intellectual styles in the Malaysian context. Furthermore, in order to assess Malaysian students' thinking and learning styles, the translated thinking styles inventory (Sternberg, et al.,

2007) and Kolb's learning styles inventory (Kolb, 1999) can be used. As intellectual styles are important contributors to academic achievement, a clearer understanding of the role of each style can help teachers to be more effective in helping students to learn efficiently. In the current study, some recommendations are discussed for educational policy makers, teachers and researchers.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**HUBUNGAN ANTARA GAYA INTELEKTUAL DAN PENCAPAIAN
AKADEMIK PELAJAR-PELAJAR SEKOLAH MENENGAH DI MALAYSIA**

Oleh

ALIREZA JILARDI DAMAVANDI

January 2012

Pengerusi: Profesor Habibah Elias, PhD.

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Kajian ini bertujuan mengkaji kesan gaya pemikiran dan pembelajaran terhadap pencapaian akademik pelajar-pelajar sekolah menengah di Malaysia. Kajian ini turut mengenalpasti gaya pemikiran dan pembelajaran yang menyumbang kepada pencapaian akademik yang berbeza. Profil Gaya Belajar Peribadi (Kolb, 1999) dan Inventori Gaya Pemikiran (TSI, Sternberg, Wagner, and Zhang, 2007) telah ditadbirkan di sembilan sekolah bantuan penuh kerajaan di Kuala Lumpur. Min skor pelajar-pelajar dalam lima matapelajaran utama iaitu Bahasa Inggeris, Sains, Matematik, Sejarah dan Geografi telah di jadikan sebagai skor pencapaian akademik pelajar-pelajar tersebut.

Sampel kajian terdiri daripada 421 pelajar Gred 10 (Tingkatan 4) telah dipilih secara rawak. Keputusan analisis varian tidak menunjukkan perbezaan tahap pencapaian

akademik yang ketara di antara pelajar-pelajar di Malaysia dalam lima aspek (*Function, Forms, Levels, Scopes and Leanings*) gaya pemikiran.

Hasil dapatan analisis regresi menunjukkan terdapat hanya gaya eksperimen aktif, pemerhatian reflektif, konservatif dan *Oligarchic* telah menyumbang kepada perbezaan pencapaian akademik pelajar; $F(17, 394) = 2.798, p < .05$. Hasil dapatan ini turut memberikan pemahaman tentang gaya pembelajaran kognitif pelajar-pelajar sekolah menengah di Malaysia.

Analisis sumbangan stail intelektual terhadap pencapaian akademik subjek-subjek menunjukkan bahawa enam pembolehubah antara stail-stail intelektual tersebut telah meramalkan pencapaian akademik secara signifikan dalam lima subjek utama. Stail-stail intelektual ini adalah Kehakiman, Berunsur Anarki, *Oligarchic*, Konservatif, Eksperimentasi Aktif dan Pencerapan Pembalikan. Di antara stail-stail ini, Eksperimentasi Aktif sentiasa meramal pencapaian akademik dalam subjek berbeza secara positif, manakala stail Konservatif sentiasa meramalkan pencapaian akademik secara negatif. Seperti yang telah diuraikan dalam keputusan, stail Kehakiman telah meramal pencapaian akademik para pelajar dalam matematik dan geografi secara signifikan. Pencerapan Pembalikan adalah salah satu peramal dalam Bahasa Inggeris, sejarah dan geografi. Akhir sekali, stail-stail *Oligarchic* dan Berunsur Anarki menyumbang kepada pencapaian para pelajar dalam geografi secara signifikan. Sumbangan unik setiap stail intelektual kepada pencapaian akademik dalam lima subjek utama ini adalah antara 7% hingga 10%. Keputusan ini bukan sahaja menunjukkan bahawa stail-stail intelektual memainkan peranan penting dalam pencapaian akademik

para pelajar dalam subjek-subjek ini; malah penggunaan stail-stail ini di Malaysia dalam subjek-subjek tersebut mempunyai kecenderungan untuk member balasan secara akademik.

Keputusan kajian ini telah membantu menimbah pengetahuan dalam memprofilan stail-stail intelektual ini dalam konteks Malaysia. Tambahan pula, untuk menilai stail-stail pemikiran serta pembelajaran pelajar-pelajar Malaysia, inventori stail-stail pemikiran alih bahasa (Sternberg, et al., 2007) dan inventori stail-stail pembelajaran Kolb (Kolb, 1999) boleh digunakan. Memandangkan stail-stail intelektual merupakan penyumbang penting kepada pencapaian akademik, pemahaman peranan setiap stail secara lebih mendalam boleh membantu tahap efektif para guru dalam membimbing pembelajaran efisien para pelajar. Dalam kajian ini, beberapa rekomendasi telah dibincangkan untuk para pembuat polisi pengajian, guru serta penyelidik.

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I certify that a Thesis Examination Committee has met on (09/01/2012) to conduct the final examination of Alireza Jilardi Damavandi on his thesis entitled **“RELATIONSHIPS BETWEEN INTELLECTUAL STYLES AND ACADEMIC ACHIEVEMENT OF MALAYSIAN SECONDARY SCHOOL STUDENTS”** in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctoral of Philosophy. Members of the Thesis Examination Committee were as follows:



This thesis was submitted to Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctoral of Philosophy. The members of the Supervisory Committee were as follows:

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DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or other institutions.

The logo of Universiti Putra Malaysia (UPM) is a shield-shaped emblem. It features a red and white design with a central vertical element and a horizontal band across the middle. The letters 'UPM' are prominently displayed in the upper left corner of the shield.

ALIREZA JILARDI DAMAVANDI

Date: 9 January 2012

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LIST OF ABBREVIATIONS

ANOVA	Analysis of covariance
EDA	Exploratory Data Analysis
TSI	Thinking Style Inventory
LSI	Learning Style Inventory
MSG	Mental Self-Government
CE	Concrete Experience
AE	Active Experimentation
AC	Abstract Conceptualization
RO	Reflective Observation

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